A near fatal presentation of a bronchogenic cyst compressing the left main coronary artery

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External compression of the left main coronary artery is a rare entity. We report the case of a woman with left main coronary artery compression from a bronchogenic cyst who had acute, severe coronary ischemia.

Clinical Summary

A 48-year-old woman with a history of pericarditis 14 years previously had acute chest pain. An electrocardiogram confirmed severe ischemic changes in the anterolateral leads. Urgent coronary angiography demonstrated a very tight ostial stenosis of the left main coronary artery. The rest of the coronary artery anatomy was normal (Figure 1).

The patient continued to have chest pain with two episodes of ventricular fibrillation necessitating direct-current cardioversion. An intra-aortic balloon pump was inserted and she was scheduled for emergency coronary artery bypass surgery. On induction of anesthesia, the patient had two further episodes of ventricular fibrillation. A perioperative transesophageal echocardiogram (TEE) showed a large cystic mass compressing the left atrium and the ostium of the left main coronary artery (Figure 2).

After a median sternotomy, the pericardium was opened, revealing dense adhesions. There was a tense 4 × 4-cm cystic mass in the transverse sinus, in close proximity to the roof of the left atrium. Fine needle aspiration revealed frank pus. After cardiopulmonary bypass had been established, the cyst was opened and its contents drained. As much of the cyst was excised as safely possible, together with the mucosa of the remaining wall. After arrest of the heart with cold blood cardioplegic solution, bypass grafts were constructed with long saphenous vein to the left anterior descending and obtuse marginal arteries.

The patient had severe vasodilation postoperatively, requiring large doses of norepinephrine and vasopressin. The electrocardiographic changes had completely resolved. The patient was started on broad-spectrum antibiotics even though microscopic analysis of the pus revealed no organisms. A postoperative TEE showed relief of the left main coronary artery compression and good left ventricular function. Intra-aortic balloon pump counterpulsation was discontinued 48 hours postoperatively. The vasoconstrictors were weaned by day 3 and the patient left the intensive treatment unit on day 5.

Histologic examination of the resected cyst revealed that its wall was lined with ciliated columnar epithelium suggestive of a bronchogenic cyst. A 64-slice computed tomographic angiogram performed 2 weeks postoperatively showed that the left main coronary artery and both vein grafts were patent. A magnetic resonance imaging (MRI) scan of the chest showed a further bronchogenic cyst measuring 5 × 3 cm in the subcarinal position but not compressing nearby structures.

This cyst was removed through a right thoracotomy 4 weeks after the initial operation to prevent further complications. The cyst was well circumscribed and contained a very thick brownish material suggesting that this was a second separate cyst. Histologic examination confirmed this to be a bronchogenic cyst. The patient made an uneventful postoperative recovery. A follow-up MRI scan at 3 months confirmed no further intrathoracic pathologic abnormalities.

Discussion

Left main coronary artery stenosis is present in 10% to 15% of patients with coronary artery disease. Obstruction of the left main coronary artery owing to extrinsic compression is rare. Several reports have demonstrated left main coronary artery compression resulting from pulmonary hypertension. There have been three reports of bronchogenic cysts causing acute coronary ischemia. In one of these, the diagnosis was made at autopsy.[1] In the other cases, it was detected on an MRI scan[2] and TEE,[3] respectively. Both of these cysts were excised through a right lateral thoracotomy. TEE and MRI are useful tools in identifying, in particular, intrapericardial cysts,[4] as in this case.

Bronchogenic cysts develop as supernumerary buds from the primitive foregut and account for 18% of all mediastinal tumors. They usually occur along the tracheobronchial tree but can occur within the lung parenchyma and pericardium and can rarely be intracardiac. They can be multiple and usually contain clear fluid, which may become infected, as in our case.

Bronchogenic cysts cause symptoms by compressing surrounding structures.[5] If detected early, excision through a thoracotomy is recommended to prevent complications. In our case, we were uncertain as to the etiology of the cyst at the first operation, and under these circumstances it was believed appropriate to graft the left coronary arteries.

Bronchogenic cysts may recur if only aspirated and not completely excised. In our case, it is unlikely that the second cyst was a recurrence. Although the first cyst was not completely excised, the second cyst was detected very early after excision of the first cyst and its contents were completely different.

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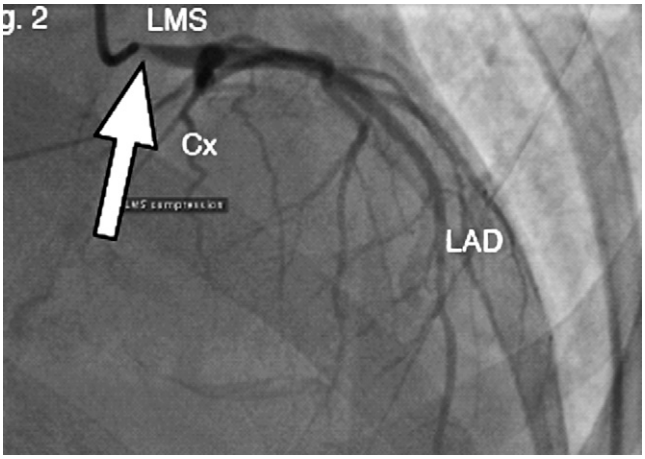

Figure 1. Coronary angiogram showing severe ostial left main coronary artery compression *(white arrow). Cx,* Circumflex artery; *LAD,* left anterior descending artery; *LMS,* left main stem coronary artery.

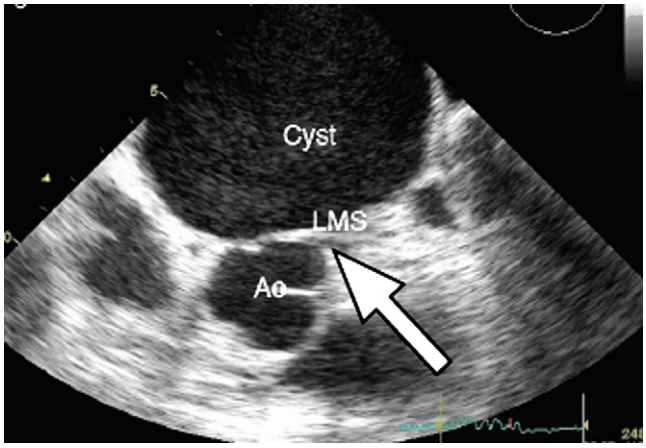

Figure 2. Perioperative TEE. Midesophageal short-axis view showing bronchogenic cyst compressing the left main stem coronary artery *(LMS, white arrow).*

This case presents a rare cause of potentially fatal acute cardiac ischemia.

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Congenital Bochdalek hernia presenting with acute pancreatitis in an adult

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Posterolateral diaphragmatic hernias (Bochdalek) are a common congenital anomaly usually presenting in the neonatal period or infancy. Although well documented, their presentation in adulthood is uncommon.[1-3] We describe the case of an adult Bochdalek hernia presenting with acute pancreatitis and intermittent gastric volvulus.

Clinical Summary

A 35-year-old Philippino woman who was congenitally deaf and mute presented with a 1-day history of upper abdominal pain and vomiting. There was no history of trauma, and her only medical history was of childhood asthma. She was noted to have upper abdominal tenderness and reduced air entry and bowel sounds present in